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RESULTS OF 1933 CONTROL PROJECTS IN THE MODOC AND LASSEN NATIONAL FORESTS

by

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Results of Willow Springs Forest Insect Control Project Lassen National Forest

In the fall of 1933 the Berkeley Laboratory of the Bureau of Entomology and Plant Quarantine recommended the treatment of infested ponderosa and Jeffrey pine timber on 23,250 acres located in the Willow Springs Unit of the Lassen National Forest, California. During the winter season the Forest Service treated 4,155 trees having a volume of 3,949,000 board feet at a cost of $18,966.70. Inasmuch as the effects of control work may continue for two years, final appraisal of the results was not possible until the 1935 losses had been cruised.

In 1934 losses on the treated area were 22.9% less than in 1933 and in 1935 they were 53.6% less. A 2,560 acre sample of nearby untreated areas showed that an increase of 72.3% occurred in 1934 and that the 1935 losses were 21.1% greater than those of 1933. When these figures are applied to the project area it is found that a saving of 10,500,000 board feet of timber has been secured in the two year period. This volume is sufficient to keep a fair sized mill, producing 50,000 board feet of lumber a day, in operation for an entire season.

Results of 1933-34 Badger Insect Control Project - Modoc National Forest

In the fall of 1933 it was recommended that infested ponderosa pine trees on about 40,000 acres in the Badger Unit of the Modoc National Forest be treated. During the winter of 1933-34 the Forest Service did control work on 41,345 acres.

The work was divided into two projects. The Hankamore CCC camp did the following work on ECW funds: Treated 2,260 trees having a volume of 2,111,750 b.m. on 14,400 acres at a gross cost of $14,328.01 . A Forest Service Crew did the following work on NIRA funds: Treated 3,588 trees containing 3,510,890 b.m. on 26,945 acres at a cost of $15,159.15. Total trees, acreages volumes and costs are as follows:

Trees - 5,848
Volume - 5,622,640
Acres - 41,345
Cost - $29,487.14

In 1934 losses on the treated area (sampled by three plots) showed an increase of 121.3% over 1933. Those of 1935 were 29.0% greater than those of 1933. On untreated areas the averages of five

plots showed an increase of 94.9% for 1934 and 115.6% for 1935.

The estimated loss on the treated area was 7,070,700 b.m. Applying the above percentages in determining differences in loss due to treatment we find that the estimated loss for 1934 and 1935 together on the treated area amounted to 24,768,500 b.m. If no treatment had been done it is estimated that the loss would have been 29,039,200 b.m. An estimated 4,270,700 b.m. was saved as a result of the work.

Estimates of intrinsic values saved by the treatment show that, at current stumpage prices of $2.00 per m.b.m., which is an extremely low price, the timber saved is worth about $8,540.00. Thus the net cost of the work becomes about $20,950.00

Comparison of results in the two areas

In both areas infestations were increasing in 1933. In both, the cycle reached its peak. Both included fringe areas and apparently similar environmental conditions. Composition of infestation was more mixed in the Lassen than in the Modoc area although in both, species other than the western pine beetle, were markedly active. Both areas were large, both bounded by timber on south, southwest and east. Both exposed to heavily infested timber within twenty miles on west and adjacent on east. Infestations lighter to south.

We cannot put our finger on any particular factor responsible for the difference. It is possible that the lightly infested sparse stand south of the Willow Springs project area was a better barrier than that in the Modoc. It is possible that the continued attrition of environmental factors, or flathead borers and other insects, had reduced the level of resistance in the Modoc stand to a point much lower than that in the Lassen.

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BASIS FOR RESULTS (CAYUGA NF)

Loss in B. M. per acre and percentage difference -1933- 100%

Treated Plots	1933	1934		1935	
L-6	120.1	119.5	-0.5%	55.9	-53.4%
L-13	224.8	122.7	-45.4%	103.5	-53.9
Ave. treated plots			-22.9%		-53.6%
Estimated loss on project area		4,755,000		2,862,000	
Untreated Plots					
L-14	357.6	731.8	plus 104.6%	386.6	plus 8.1%
L-12	109.9	157.2	plus 43.0%	75.6	-31.2%
L-1	189.8	264.6	plus 39.4%	314.7	plus 65.8%
L-5	106.1	172.4	plus 62.5%	175.4	plus 65.3%
L-7	141.1	133.1	-5.7%	128.7	-8.8%
L-8	328.2	570.2	plus 77.0%	466.2	plus 44.7%
L-10	100.1	230.6	plus 130.4%	138.7	plus 38.6%
L-11	161.0	366.0	plus 127.3%	138.8	-13.7%
Total differences		plus 578.5		plus 166.8	
Ave. differences		plus 72.3		plus 21.1	
Estimated loss on project area		10,672,000		7,469,000	
Estimated saving		5,872,000		4,607,000	

BASIS FOR RESULTS (HOOSIC NF)

Loss in B. M. per acre and percentage difference - (1933- 100%)

Treated Plots	1933	1934	1935
RS 5	219.8	507.8 plus 131.0%	261.3 plus 18.9%
MC 5	67.3	90.0 plus 35.1%	90.0 plus 35.1%
MC 3	327.6	975.8 plus 197.9%	436.0 plus 33.1%
Totals		plus 364.0	plus 87.1
Ave.		plus 121.3	plus 29.0
Untreated Plots			
RS 1	219.8	507.8 plus 131.0%	368.4 plus 67.6%
MC 2	176.6	394.7 plus 123.5%	723.8 plus 309.9%
MC 1	127.2	195.5 plus 53.7%	286.1 plus 126.5%
MC 6	267.3	437.5 plus 63.7%	299.5 plus 12.0%
RS 3	126.8	256.8 plus 102.5%	206.7 plus 63.0%
Totals		plus 474.4	plus 579.0
Ave.		plus 94.9	plus 115.8

1933 estimated loss 88,070 acres (Badger Unit - 15,060,000 b.m.
1933 estimated loss on project area 41,345 acres- 7,070,670 b.m.
Estimated losses on project areas

	1934	1935
After treatment	15,647,392 b.m.	9,121,164 b.m.
Assuming no treatment	13,780,736 b.m.	13,258,506 b.m.

Net difference for two year period in favor of treatment - 4,270,686 b.m.